SEQUENCE LISTING

<110>  E.I. duPont de Nemours and  Company Inc.
       Meyer, Knut
       Dhugga, Kanwarpal

<120>  Method to Produce para-Hydroxybenzoic Acid in the Stem Tissue of
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<170>  PatentIn version 3.2

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Gly Thr Arg Glu Asp Gly Gln Pro Phe Val Ala Cys Ala Glu Cys Gly
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Phe Pro Val Cys Arg Pro Cys Tyr Glu Tyr Glu Arg Ser Glu Gly Thr
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Gln Cys Cys Pro Gln Cys Asn Thr Arg Tyr Lys Arg Gln Lys Gly Cys
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Pro Arg Val Glu Gly Asp Glu Glu Glu Gly Pro Glu Met Asp Asp Phe
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Glu Asp Glu Phe Pro Ala Lys Ser Pro Lys Lys Pro His Glu Pro Val
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Ala Phe Asp Val Tyr Ser Glu Asn Gly Glu His Pro Ala Gln Lys Trp
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Arg Thr Gly Gly Gln Thr Leu Ser Ser Phe Thr Gly Ser Val Ala Gly
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Lys Asp Leu Glu Ala Glu Arg Glu Met Glu Gly Ser Met Glu Trp Lys
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Asp Arg Ile Asp Lys Trp Lys Thr Lys Gln Glu Lys Arg Gly Lys Leu
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Asn His Asp Asp Ser Asp Asp Asp Asp Lys Asn Glu Asp Glu Tyr
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Met Leu Leu Ala Glu Ala Arg Gln Pro Leu Trp Arg Lys Val Pro Ile
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Lys Val Gln Pro Thr Phe Val Lys Glu Arg Arg Ala Met Lys Arg Glu
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Tyr Glu Glu Phe Lys Val Arg Ile Asn Ala Leu Val Ala Lys Ala Gln
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Lys Lys Pro Glu Glu Gly Trp Val Met Gln Asp Gly Thr Pro Trp Pro
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Gly Ala Met Asn Ala Leu Val Arg Val Ser Ala Val Leu Thr Asn Ala
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Pro Phe Ile Leu Asn Leu Asp Cys Asp His Tyr Val Asn Asn Ser Lys
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Lys Leu Cys Tyr Val Gln Phe Pro Gln Arg Phe Asp Gly Ile Asp Arg
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His Asp Arg Tyr Ala Asn Arg Asn Val Val Phe Phe Asp Ile Asn Met
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Lys Gly Leu Asp Gly Ile Gln Gly Pro Val Tyr Val Gly Thr Gly Cys
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Val Phe Asn Arg Gln Ala Leu Tyr Gly Tyr Asp Pro Pro Arg Pro Glu
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Lys Arg Pro Lys Met Thr Cys Asp Cys Trp Pro Ser Trp Cys Cys Cys
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Cys Cys Cys Phe Gly Gly Gly Lys Arg Gly Lys Ala Arg Lys Asp Lys
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Lys Gly Asp Gly Gly Glu Glu Pro Arg Arg Gly Leu Leu Gly Phe Tyr
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Arg Lys Arg Ser Lys Lys Asp Lys Leu Gly Gly Gly Ser Val Ala Gly
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Ser Lys Lys Gly Gly Gly Leu Tyr Lys Lys His Gln Arg Ala Phe Glu
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Leu Glu Glu Ile Glu Glu Gly Leu Glu Gly Tyr Asp Glu Leu Glu Arg
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Ser Ser Leu Met Ser Gln Lys Ser Phe Glu Lys Arg Phe Gly Gln Ser
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Pro Val Phe Ile Ala Ser Thr Leu Val Glu Asp Gly Gly Leu Pro Gln
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Gly Ala Ala Ala Asp Pro Ala Ala Leu Ile Lys Glu Ala Ile His Val
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Ile Ser Cys Gly Tyr Glu Glu Lys Thr Glu Trp Gly Lys Glu Ile Gly
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Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr Gly Phe Lys Met
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Val Ser Ala His Leu Phe Ala Val Phe Gln Gly Phe Leu Lys Val Leu
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Page 25

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Glu Arg Val Thr Met Gly Ser His Leu Asn Asp Arg Gln Asp Glu Val
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Ser His Ala Arg Thr Met Ser Ser Leu Ser Gly Ile Gly Ser Glu Leu
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Lys Glu Lys Lys Asn Glu Lys Lys Ala Ser Ala Lys Lys Thr Ala Ala
    130                 135                 140

Lys Ala Gln Pro Pro Pro Val Glu Glu Gln Ile Met Asp Glu Lys Asp
145                 150                 155                 160

Leu Thr Asp Ala Tyr Glu Pro Leu Ser Arg Val Ile Pro Ile Ser Lys
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Asn Lys Leu Thr Pro Tyr Arg Ala Val Ile Ile Met Arg Leu Ile Val
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Leu Gly Leu Phe Phe His Tyr Arg Ile Thr Asn Pro Val Asn Ser Ala
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Phe Gly Leu Trp Met Thr Ser Val Ile Cys Glu Ile Trp Phe Gly Phe
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Ser Trp Ile Leu Asp Gln Phe Pro Lys Trp Tyr Pro Ile Asn Arg Glu
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Thr Tyr Val Asp Arg Leu Ile Ala Arg Tyr Gly Asp Gly Glu Glu Ser
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Gly Leu Ala Pro Val Asp Phe Phe Val Ser Thr Val Asp Pro Leu Lys
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Glu Pro Pro Leu Ile Thr Ala Asn Thr Val Leu Ser Ile Leu Ala Val
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Asp Tyr Pro Val Glu Lys Ile Ser Cys Tyr Val Ser Asp Asp Gly Ser
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Pro Ser Phe Val Lys Glu Arg Arg Ala Met Lys Arg Asp Tyr Glu Glu
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Val Ile Ser Cys Gly Tyr Glu Glu Lys Thr Glu Trp Gly Lys Glu Ile
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Gly Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr Gly Phe Lys
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Cys Pro Leu Trp Tyr Gly Tyr Gly Gly Gly Arg Leu Lys Trp Leu Gln
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Ser Gln Ile Thr Glu Ala Met Leu His Gly Arg Met Ser Tyr Gly Arg
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Lys Gly Leu Asp Gly Ile Gln Gly Pro Val Tyr Val Gly Thr Gly Cys
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Asp Asp Gly Gly Asp Met Asp Asp Phe Glu Glu Glu Phe Gln Ile Lys
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Ser Pro Thr Lys Gln Lys Pro Pro His Glu Pro Val Asn Phe Asp Val
            100                 105                 110

Tyr Ser Glu Asn Gly Glu Gln Pro Ala Gln Lys Trp Arg Pro Gly Gly
    115                 120                 125

Pro Ala Leu Ser Ser Phe Thr Gly Ser Val Ala Gly Lys Asp Leu Glu
    130                 135                 140

Gln Glu Arg Glu Met Glu Gly Gly Met Glu Trp Lys Asp Arg Ile Asp
145                 150                 155                 160
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Page 39

Lys Trp Lys Thr Lys Gln Glu Lys Arg Gly Lys Leu Asn Arg Asp Asp
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Ser Asp Asp Asp Asp Asp Lys Asn Asp Asp Glu Tyr Met Leu Leu Ala
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Tyr Pro Val Asp Arg Val Ser Cys Tyr Val Ser Asp Asp Gly Ala Ser
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Trp Val Pro Phe Cys Lys Lys Phe Thr Ile Glu Pro Arg Ala Pro Glu
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Phe Tyr Phe Ser Gln Lys Ile Asp Tyr Leu Lys Asp Lys Val Gln Pro
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Page 41

Gln Gly Ala Ala Ala Asp Pro Ala Ala Leu Ile Lys Glu Ala Ile His
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Val Ile Ser Cys Gly Tyr Glu Glu Lys Thr Glu Trp Gly Lys Glu Ile
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Thr Ile  Val Val Leu Trp Ser  Ile Leu Leu Ala Ser  Ile Phe Ser
    1025                1030                1035

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Tyr Gly Ala Pro Asp Pro Ala His Gly Gln Gly Ala Val Val Glu Glu
    50                  55                  60

Glu Val Glu Glu Ser His Glu Pro Ala Ala Gly Gly Val Arg Glu Arg
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Val Thr Met Ala Ser Gln Leu Ser Asp His Gln Asp Glu Gly Val His
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Ala Arg Thr Met Ser Thr His Ala Arg Thr Ile Ser Ser Val Ser Gly
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Val Gly Ser Glu Leu Asn Asp Glu Ser Gly Lys Pro Ile Trp Lys Asn
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Arg Val Glu Ser Trp Lys Glu Lys Lys Lys Glu Lys Lys Ala Ser Ala
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Lys Lys Ala Ala Ala Lys Ala Gln Ala Pro Pro Val Glu Glu Gln Ile
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Met Asp Glu Lys Asp Leu Thr Asp Ala Tyr Glu Pro Leu Ser Arg Ile
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Ile Pro Ile Ser Lys Asn Lys Leu Thr Pro Tyr Arg Ala Val Ile Ile
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Met Arg Leu Val Val Leu Gly Leu Phe Phe His Tyr Arg Ile Thr Asn
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Pro Ile Asn Arg Glu Thr Tyr Val Asp Arg Leu Ile Ala Arg Tyr Gly
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Asp Gly Glu Asp Ser Gly Leu Ala Pro Val Asp Phe Phe Val Ser Thr
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Val Asp Pro Leu Lys Glu Pro Pro Leu Ile Thr Ala Asn Thr Val Leu
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Ser Ile Leu Ala Val Asp Tyr Pro Val Glu Lys Ile Ser Cys Tyr Val
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Ser Asp Asp Gly Ser Ala Met Leu Thr Phe Glu Ser Leu Ala Glu Thr
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Ala Glu Phe Ala Arg Arg Trp Val Pro Phe Cys Lys Lys Tyr Ser Ile
325                           330                           335

Glu Pro Arg Ala Pro Glu Phe Tyr Phe Ser Gln Lys Ile Asp Tyr Leu
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Lys Asp Lys Ile His Pro Ser Phe Val Lys Glu Arg Arg Ala Met Lys
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Arg Asp Tyr Glu Glu Tyr Lys Val Arg Ile Asn Ala Leu Val Ala Lys
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Ala Gln Lys Thr Pro Glu Glu Gly Trp Ile Met Gln Asp Gly Thr Pro
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405                           410                           415

Leu Gly Glu Thr Gly Ala Arg Asp Phe Asp Gly Asn Glu Leu Pro Arg
420                           425                           430

Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly Tyr Gln His His Lys
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Lys Ala Gly Ala Met Asn Ala Leu Val Arg Val Ser Ala Val Leu Thr
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Asn Ala Pro Tyr Ile Leu Asn Leu Asp Cys Asp His Tyr Val Asn Asn
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Ser Lys Ala Val Arg Glu Ala Met Cys Phe Met Met Asp Pro Ser Val
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Asp Arg Ser Asp Arg Tyr Ala Asn Arg Asn Val Val Phe Phe Asp Val
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Gly Cys Cys Phe Tyr Arg Gln Ala Leu Tyr Gly Tyr Gly Pro Pro Ser
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Leu Pro Ala Leu Pro Lys Ser Ser Val Cys Ser Trp Cys Cys Cys Cys
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Cys Pro Lys Lys Lys Ala Glu Lys Ser Glu Lys Glu Met His Arg Asp
580                           585                           590

Page 46

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Asp Asn Tyr Asp Glu Tyr Glu Arg Ser Met Leu Ile Ser Gln Met Ser
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Met Glu Asn Gly Gly Val Pro Glu Ser Ala Asn Pro Ser Thr Leu Ile
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Lys Glu Ala Ile His Val Ile Ser Cys Gly Tyr Glu Glu Lys Thr Glu
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Trp Gly Lys Glu Val Leu Arg Trp Ala Leu Gly Ser Val Glu Ile Phe
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Leu Ser Arg His Cys Pro Leu Trp Tyr Gly Tyr Gly Gly Gly Arg Leu
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Lys Trp Leu Gln Arg Leu Ser Tyr Ile Asn Thr Ile Val Tyr Pro Phe
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Thr Ser Leu Pro Leu Ile Ala Tyr Cys Cys Leu Pro Ala Ile Cys Leu
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Leu Thr Gly Lys Phe Ile Ile Pro Thr Leu Ser Asn Ala Ala Thr Ile
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Leu Arg Trp Ser Gly Ile Gly Ile Glu Asp Trp Trp Arg Asn Glu Gln
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Gly Ile Leu Lys Met Ile Ala Gly Leu Asp Thr Asn Phe Thr Val Thr
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Val Gly Val Val Ala Gly Phe Ser Asp Ala Leu Asn Ser Gly Tyr Glu
    850                 855                 860

Page 47

Ser Trp Gly Pro Leu Phe Gly Lys Val Phe Phe Ala Met Trp Val Ile
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Asp Gly Asp Leu Phe Val Ala Cys Asn Glu Cys Gly Phe Pro Val Cys
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Gly Arg Gly Pro Asp Asp Gly Asp Gly Asn Ser Thr Pro Leu Pro Pro
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Ile His Pro Tyr Pro Val Ser Glu Pro Gly Ser Ala Lys Trp Asp Glu
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Val Pro Asp Ala Ile Pro Leu Trp Leu Thr Ser Ile Ile Cys Glu Ile
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Glu Gly Glu Pro Ser Leu Leu Ser Ala Val Asp Leu Phe Val Ser Thr
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cacc                                                                     724